APPENDIX C

MDCH HEALTH CONSULTATION REPORT

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HEALTH CONSULTATION

BAY COUNTY CONFERENCE CENTER

BAY CITY, MICHIGAN

October 3, 1996

prepared by

Michigan Department of Community Health (MDCH)
Under a Cooperative Agreement with
Agency for Toxic Substances and Disease Registry (ATSDR)

FOREWORD

The Michigan Department of Environmental Quality (MDEQ) has asked the Michigan Department of Community Health (MDCH) to evaluate the health risks associated with several properties included in the Brownfields Pilot Projects in Detroit and other cities in Michigan.

A Brownfields property is a piece of land that formerly was used for industrial or commercial purposes, that is currently abandoned and that some industrial or commercial entity has expressed an interest in acquiring for future use. The local governmental entities have asked the MDEQ to conduct environmental assessments of the Brownfields properties in their jurisdiction. The MDEQ has consulted with the MDCH concerning public health aspects of these assessments.

The MDCH health consultation for a Brownfields property includes consideration of the following fundamental questions:

- Are there any imminent or urgent threats to public health associated with the property?
- Does the proposed future use of the property pose any long-term public health hazard?
- What specific actions, if any, are necessary to make the property safe for future use?
- Is there enough information available to answer these questions, and if not, what additional information is needed?

SUMMARY

The governments of Bay City and Bay County, Michigan, have proposed to construct a new County Conference Center in downtown Bay City. The property proposed for the Conference Center historically housed a sawmill and lumber yard, an automobile dealership, a vehicle maintenance garage, and a motel. The motel, closed and vacant at the present time, is the only structure currently on the property, the remainder of the property is parking lots.

Samples of tile collected from the motel on the property contained asbestos. The tiles that were sampled are not friable, therefore the asbestos-containing material poses no public health hazard under current conditions. The building needs to be evaluated to determine whether the asbestos needs to be removed before the building is demolished.

No surface soil samples have been collected from the property, approximately 3/4 of which is paved. Subsurface soil samples did contain elevated concentrations of some metals, but the metals should not pose any health hazard to workers digging foundations for the proposed conference center.

BACKGROUND AND STATEMENT OF ISSUES

The Michigan Department of Environmental Quality (MDEQ) has asked the Michigan Department of Community Health (MDCH) to evaluate the health risks associated with the property proposed for the construction of a new conference center in downtown Bay City, Michigan, as part of the Brownfields Pilot program (1).

The City of Bay City, Michigan, and Bay County, Michigan, have created the Bay County Conference Center Building Authority (BCCCBA) to carry out a proposal to construct a new conference center in downtown Bay City. The proposed location for the conference center is at 621 North Water Street and 50 6th Street, a 2.5-acre property between Water Street, 6th Street, Mechelen Drive, and 7th Street (Figure 1). The Saginaw River is across Mechelen Drive west of the property. From east to west, the property is currently occupied by asphalt parking lots that cover half the property, then a closed motel building, concrete pavements, and grass lawn. At the time of a MDCH visit to the site in August 1996, there were several trees on the lawn area. Except for the motel property, currently privately owned, the property is owned by the City, who is negotiating with the owner for the purchase of the motel property (1, 2). The motel building would be demolished before the conference center is constructed. The block immediately east of the main property, between Water Street, Saginaw Street, and 6th and 7th Streets, is also under consideration to be part of the conference center complex. This block is currently occupied by an operating truck parts sales and machine shop, a closed office building, and a paved parking lot.

Around the turn of the century, a sawmill was constructed on what is now the eastern half of the property. At that time, what is now the western half of the property was part of the Saginaw River, though blocked off with piers and a log boom to provide a harbor area for the mill. In

1935, the sawmill was replaced by a automobile dealership, and the log boom area was converted to a marina. In 1956, the log boom area was filled in as part of the construction of the Veterans Memorial Bridge to the south of the property. The motel was constructed in the west center of the property in 1963, and was closed in 1994. The automobile dealership was used by the City as a bus maintenance facility from 1977 to 1981, and was demolished soon thereafter. Records indicate that the auto dealership/bus maintenance facility may have had as many as five underground storage tanks on the property. Four underground tanks were removed from the property in 1982. The available information does not reconcile these numbers, and further investigation of the matter is in progress (3, 4, 5).

In 1980 and 1987, contractors investigated the subsurface soil on the property, with soil borings to identify the subsurface materials but no chemical analysis was conducted (3). In March, July, and November 1995, a contractor for the BCCCBA conducted field work for an environmental assessment of the property. The contractors collected samples of tiles from the closed motel for analysis of asbestos content and soil and groundwater samples from borings and temporary monitoring wells on the property for chemical analysis for metals, volatile organic chemicals (VOCs)[1], polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs). They also conducted magnetometer surveys of portions of the property in attempts to locate remaining underground storage tanks. They found several magnetic anomalies, some of which might represent underground tanks, but no further investigation has been done (4, 5, 6). There is no information available on any previous environmental assessment of the block between Water and Saginaw Streets east of the main property.

In April 1996, the MDEQ collected subsurface soil samples and groundwater samples the property and adjacent areas. Eight soil samples were collected from depths between 4 feet and 16 feet in four borings on the property. Six soil samples were collected from similar depths in three borings along 6th Street and the Wenona Park entrance road north of the property. Five more soil samples were from depths between 4 and 12 feet in borings from the block between Water Street, Saginaw Street, and 6th and 7th Streets, immediately east of the site. The water samples were collected from temporary monitoring wells installed in the four borings on the site and the three borings north of the site. The MDEQ analyzed the samples for metals, VOCs, semi-volatile organic chemicals including PAHs, PCBs, and pesticides (7).

DISCUSSION

No samples of surface soil have been collected from the property. However, the majority of the property is paved with concrete or asphalt. The parking areas on the property should not pose any significant health hazard to anyone visiting them. The lawn areas are well vegetated and have been maintained to a degree. There is no evidence or indication that the lawn areas have been impacted by industrial chemical spills.

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[1] Some samples were analyzed for a full suite of VOCs, others only for benzene, toluene, ethylbenzene, and xylenes (BTEX).

The concentration of lead in the subsurface soil collected from borings on the property (Table 1) exceeded MDEQ Generic Clean-up Criteria for industrial or commercial use (8). The MDEQ clean-up levels for lead in commercial/industrial areas are the same as the residential levels, developed using the U.S. EPA Integrated Uptake Biokinetic Model for children. No risk assessment methods are currently available to evaluate lead toxicity in adults.

The arsenic and benzo(a)pyrene concentrations in the subsurface soil on the property exceed the MDEQ criteria for residential use (9). The maximum arsenic concentration found is substantially above that found in background soils of the area (10). The concentrations of polycyclic aromatic hydrocarbons (PAHs)[2] found in the subsoil samples are within the range of concentrations normally found in urban soils (Reference 11, Table 5-3). The concentrations of benzene, ethylbenzene, toluene, trichloroethylene, and xylenes found in the subsurface soil do not exceed the MDEQ Generic Clean-up Criteria for industrial, commercial, or residential use.

The concentrations of chemicals considered[3] in subsurface soil collected near the property (Table 2, Table 3) do not exceed the MDEQ Generic Clean-up Criteria for industrial, commercial, or residential use.

The people who are most likely to be exposed to the subsurface soil on the property will be workers excavating for and constructing basements and foundations for the proposed conference center. None of the workers are likely to spend enough time in the excavation to incur any adverse health effects from the contaminants.

The concentrations of the chemicals considered in the groundwater at the property (Table 4) do not present any significant health hazard. The arsenic, barium, and copper concentrations do not exceed the corresponding U.S. EPA Maximum Contaminant Levels or Maximum Contaminant Level Goals. The manganese concentration exceeded the U.S. EPA Secondary Maximum Contaminant Level, established from non-health-based considerations such as taste, odor, or appearance. The groundwater in the vicinity of the property is not used for any purpose. The area is supplied by the Bay City municipal water system, which takes its water from Saginaw Bay, approximately 15 miles north of the city. The groundwater at the property appears to be hydraulically connected to the adjacent Saginaw River, though the contractors found the groundwater under the property to apparently flow southward, against the northerly flow of the

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[2] PAHs found on the property include benzo(a)pyrene, benzo(b)fluoranthene, phenanthrene

[3] The chemicals considered in this evaluation were selected from those chemicals found in environmental media at the property by comparison with media-specific screening values used by ATSDR. In addition, benzene, ethylbenzene, toluene, trichloroethylene and xylenes were included because the history of the property indicates that they were probably used and might be present. The inclusion of chemicals in this evaluation does not necessarily indicate that the presence of the chemicals poses any substantial public health risk under the conditions at the property.

river and slightly away from it (6). This may be due to an unidentified obstruction to groundwater flow between the property and the river diverting the groundwater flow southward.

Some of the tile samples collected from the closed motel on the property contained 5% asbestos in a non-fibrous binder. The tile sampled was described as being in poor to fair condition, and non-friable, posing no immediate health threat if they are not disturbed (4). A formal asbestos inventory of the motel has not been done, but, based on the description of the building in Reference 4, there might be enough asbestos-containing tile present to require separate removal under the National Emission Standards for Hazardous Air Pollutants, Asbestos NESHAP Revision (40 CFR Part 61, Section 61.145(a)).

CONCLUSIONS

From the available data and information, the largest potential health hazard relating to the property is the asbestos-containing tiles in the closed motel on the property. The tiles are in fair to poor condition but are not friable and do not pose any immediate health hazard. However, when the building is demolished, the asbestos fibers might be liberated. There might be enough asbestos-containing tiles in the motel to require proper removal, under federal law, before the building is demolished, though there is no record of an official inspection to determine this.

The concentrations of chemicals found in the subsurface soil on the property should not pose any health hazard to workers digging foundations for the proposed conference center.

RECOMMENDATIONS

The motel should be inspected by qualified personnel to estimate the total asbestos-containing material present, to determine whether the asbestos-containing material needs to be removed before the building is demolished.

New environmental data or information may require future health consultations concerning the future use of this property. Similarly, changes to the proposed use of the property may require additional investigation and further health consultations.

REFERENCES

1. Michigan Department of Environmental Quality. Brownfields Redevelopment Assessment Work Plan for Bay City Conference Center, 621 North Water Street and 50 6th Street, Bay City, Michigan. March 12, 1996.

2. Klann, R., MDNR[4]. Meeting notes. September 19, 1995.

3. Soils and Materials Engineers, Inc. Phase I Environmental Site Assessment, Proposed Conference Center, Bay City, Michigan. February 5, 1995.

4. RC Engineering and Environmental, Inc. Phase II Environmental Site Assessment, Proposed Conference Center, Bay City, Michigan. April 25, 1995.

5. RC Engineering and Environmental, Inc. Additional Environmental Site Assessment Services Report, Proposed Bay County Conference Center, 621 North Water and 50 6th Streets, Bay City, Michigan. December 14, 1995.

1. RC Engineering and Environmental, Inc. Phase IIB Environmental Site Assessment, Proposed Conference Center, Bay City, Michigan. August 3, 1995.

2. Michigan Department of Environmental Quality. Unpublished laboratory data. June 10, 1996, July 9, 1996.

3. Howard, A.J., MDNR ERD. Memorandum to ERD staff, subject: Environmental Response Division Operational Memorandum #14 Revision 2: Remedial Action Plans Using Generic Industrial or Generic Commercial Cleanup Criteria or Other Requirements. June 6, 1995.

4. Howard, A.J., MDNR ERD. Memorandum to ERD staff, Subject: Interim Environmental Response Division Operational Memorandum #8, Revision 4: Generic Residential Cleanup Criteria. June 5, 1995.

5. Michigan Department of Natural Resources, Waste Management Division. Michigan Background Soil Survey. Revised April 1991.

6. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Polycyclic Aromatic Hydrocarbons, Update. August 1995.

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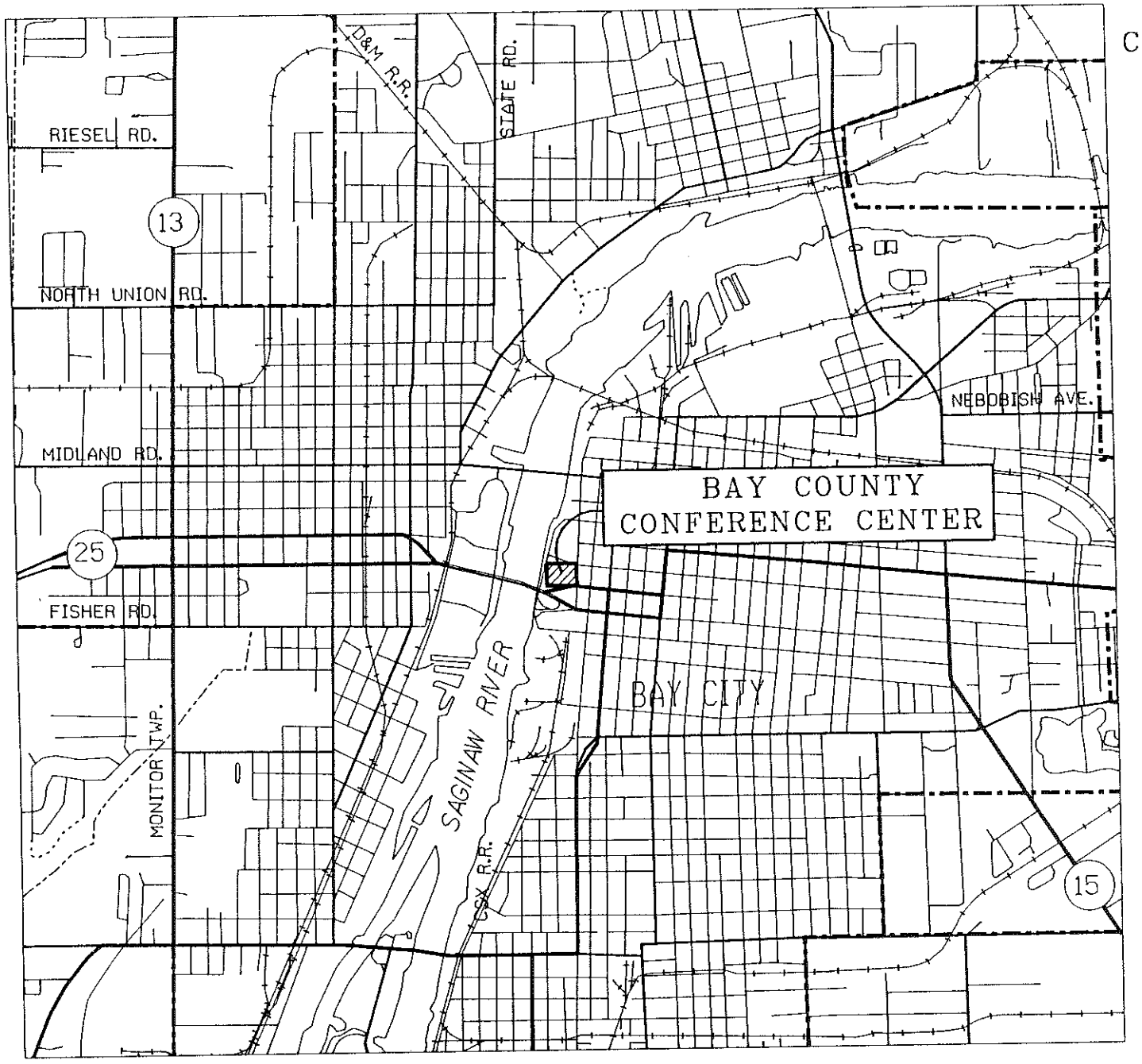
[4] Effective October 1, 1995, the environmental regulation and remediation functions of the Michigan Department of Natural Resources (MDNR) were transferred to the newly-formed Michigan Department of Environmental Quality (MDEQ).

Figure 1.



BAY COUNTY CONFERENCE CENTER

PROPERTY LOCATION

- INTERSTATE HIGHWAYS (496)
- U.S. HIGHWAYS (2)
- STATE HIGHWAYS (55)
- OTHER MAJOR ROADS
- MINOR ROADS
- TWO-TRACK ROADS
- AIRPORTS
- GRASS AIRSTRIPS
- RAILROADS
- ABANDONED RAILROADS
- RIVERS AND STREAMS
- INTERMITTENT STREAMS
- POLITICAL BOUNDARIES
- PROPERTY

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Michigan Department of Public Health

Base map information provided by Michigan Department of Natural Resources, MIRIS Program

6/11/96

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CERTIFICATION

The Bay County Conference Health Consultation was prepared by the Michigan Department of Community Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was initiated.

Technical Project Officer, SPS, SSAB, DHAC

The Division of Health Assessment and Consultation, ATSDR, has reviewed this health consultation and concurs with its findings.

Chief, SPS, SSAB, DHAC, ATSDR

Table 1.Concentrations of chemicals considered in samples of subsurface soil from the proposed Bay County Conference Center property, 1995, 1996.

Chemical	Date	Maximum concentration (ppm)	References
arsenic	1995	61.	4, 5, 6
	4/96	16.7	7
barium	1995	110.	4, 5, 6
	4/96	362	7
benzene	1995	0.11	4, 5, 6
	4/96	ND	7
benzo(a)pyrene	1995	1.9	4, 5, 6
	4/96	6.3	7
benzo(b)fluoranthene	1995	4.4	4, 5, 6
	4/96	9.7	7
cadmium	1995	1.9	4, 5, 6
	4/96	1.7	7
chromium	1995	91.	4, 5, 6
	4/96	16.3	7
chrysene	1995	3.7	4, 5, 6
	4/96	6.2	7
copper	1995	150	4, 5, 6
	4/96	61.5	7
ethylbenzene	1995	5.46	4, 5, 6
	4/96	ND	7
lead	1995	250	4, 5, 6
	4/96	897	7
mercury	1995	0.95	4, 5, 6
	4/96	0.88	7
phenanthrene	1995	7.8	4, 5, 6
	4/96	7	7
toluene	1995	0.446	4, 5, 6
	4/96	0.001J	7
trichloroethylene	1995	ND	4, 5, 6
	4/96	0.001J	7
xylenes (total)	1995	20.3	4, 5, 6
	4/96	0.002J	7

J —Estimated value

ND —Not Detected

Table 2.Concentrations of chemicals considered in samples of subsurface soil collected from 6th Street and Wenona Park near the proposed Bay County Conference Center property, April 1996.

Chemical	Maximum concentration (ppm)
arsenic	7.0
barium	69.7
benzo(a)pyrene	1.2
benzo(b)fluoranthene	1.4
chromium	16.3
chrysene	1.4
copper	24.7
lead	57.5
mercury	0.34
phenanthrene	4.6

Reference: 7

Chemicals that are not listed were not detected.

Table 3.Concentrations of chemicals considered in samples of subsurface soil from the block east of the proposed Bay County Conference Center property, April 1996.

Chemical	Maximum concentration (ppm)
arsenic	8.0
barium	56.2
benzo(a)pyrene	0.058J
benzo(b)fluoranthene	0.092J
chromium	17.8
chrysene	0.063J
copper	14.7
lead	72.5
phenanthrene	0.057J
xylenes (total)	0.003J

Reference: 7

J —Estimated Value

Chemicals that are not listed were not detected.

Table 4.Concentrations of chemicals considered in groundwater samples collected on the proposed Bay County Conference Center property, 1995-6.

Chemical	Date	Maximum concentration (ppb)	References
arsenic	1995	20	4, 5, 6
	4/96	ND (4)	7
barium	1995	1,400	4, 5, 6
	4/96	288	7
chrysene	1995	5.2	4, 5, 6
	4/96	ND (10)	7
chromium	1995	ND (50)	4, 5, 6
	4/96	0.86J	7
copper	1995	27	4, 5, 6
	4/96	1.7J	7
manganese	1995	—	4, 5, 6
	4/96	3,880	7
phenanthrene	1995	17	4, 5, 6
	4/96	1.J	7

Chemicals that are not listed were not detected.

J —Estimated Value

ND —Not Detected (with detection limit)

— =Analysis not performed

Table 5.Concentrations of chemicals considered in groundwater samples collected north of the proposed Bay County Conference Center property, April 1996.

Chemical	Maximum concentration (ppb)
barium	312
chromium	1.3J
copper	1.8J
manganese	2,360

Reference: 7

Chemicals that are not listed were not detected.

J —Estimated Value